

Learning Module Focused on Google Internet Search Skills for Middle School Students



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Let's take a quick survey!

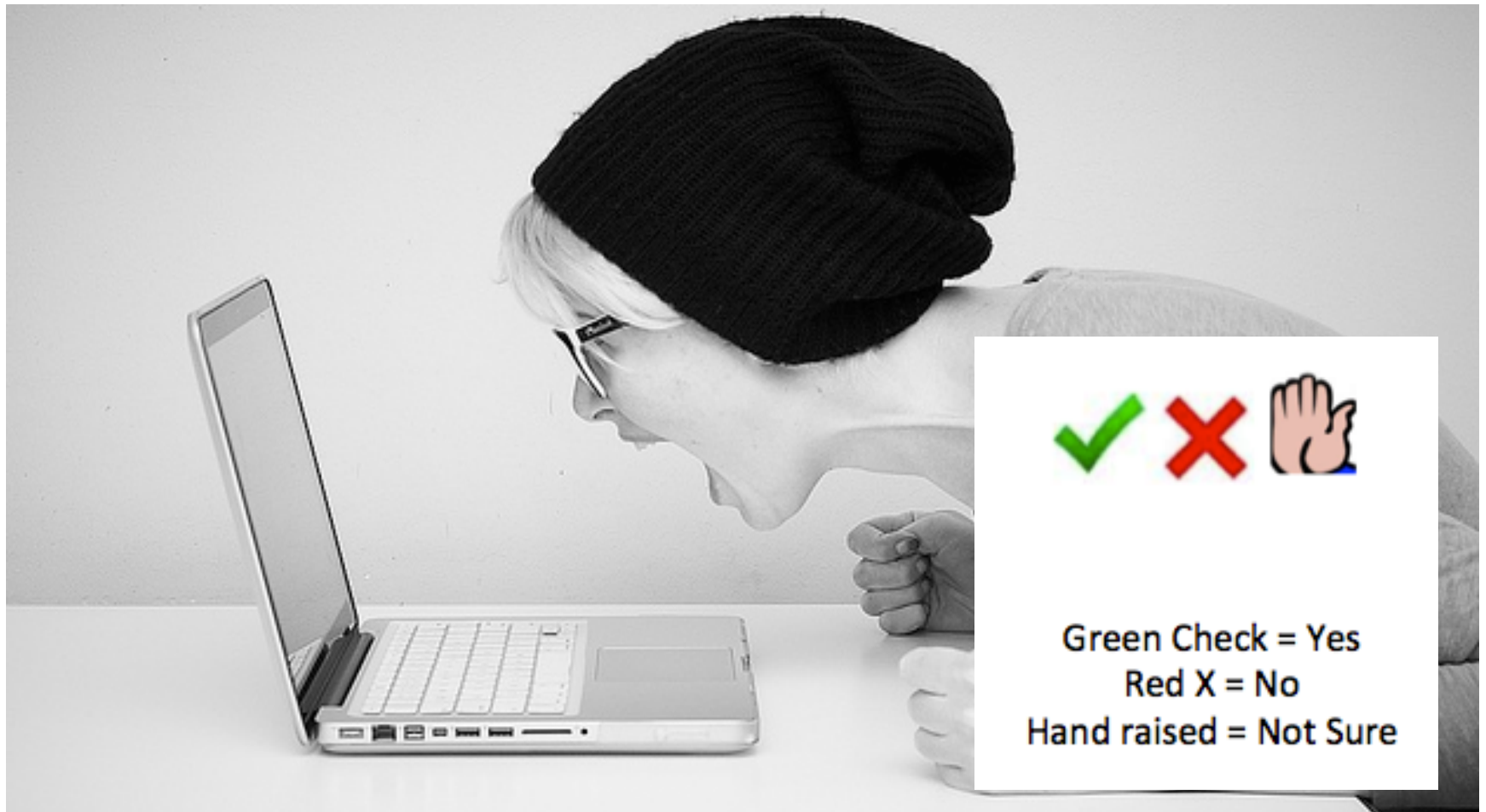


Green Check = Yes

Red X = No

Hand raised = Not Sure

Have you ever experienced frustration when using an Internet search engine?



Do you know what “Boolean Search Strategies” are?



Have you used “Boolean Search Strategies” throughout your Internet searching?



Green Check = Yes
Red X = No
Hand raised = Not Sure

Overview of Presentation

Introduction

Background

Methodology

Test Audience

Module Development and Design

Evaluation Elements

Results

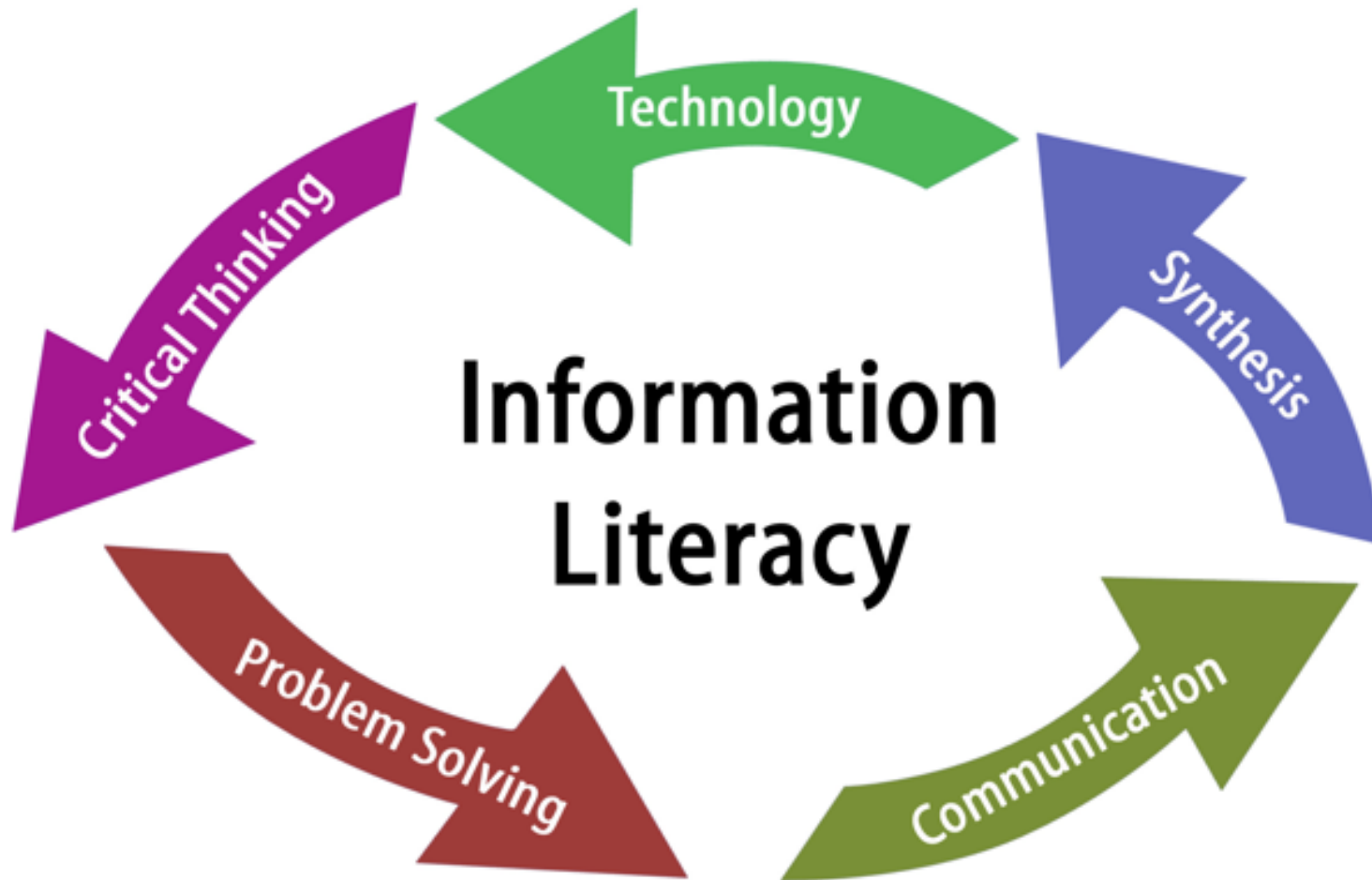
Conclusions



Introduction

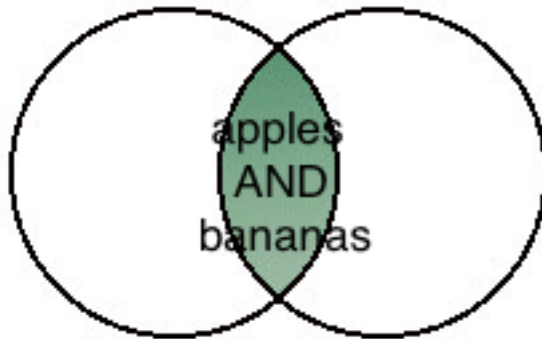


Information Literacy Skills

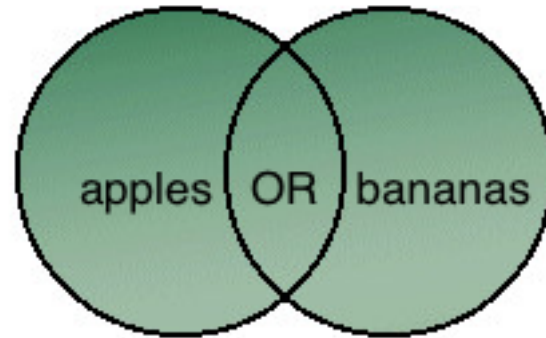


What are “Boolean Search Skills”?

"AND"



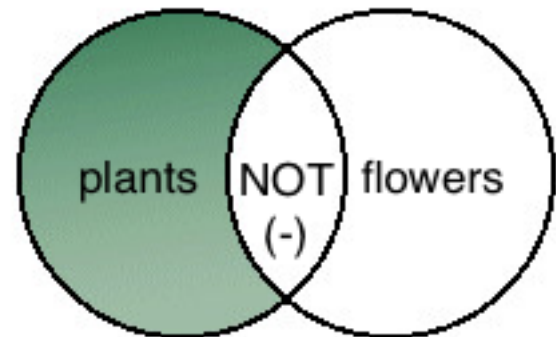
"OR"



Truncation



the Minus Sign (-)



The **purpose** of this

Savvy Search Skills Journey

Instructional Design Module:

to develop and evaluate a web-based instructional module teaching basic information literacy skills to support middle school students' ability to effectively conduct online searches

Background

- Concerning levels of information literacy skill development:
 1. evaluating information
 2. using Boolean search techniques.
- Educational budget cuts
- Online search skills are not emphasized at schools.



Methodology



Test Audience



Intended for Middle School Students

Module Development and Design

+ <http://justinemaeda.weebly.com/index.html>

Reader



Google

Savvy Search Skills Journey

Home

Savvy Search Skills
Journey

Resources I: Vocabulary

Resources II: Search
Strategies

Google-a-Day

Contact Me



Aloha Research Participant!

Google has made it so easy to access information instantly! With just a few clicks, the site that matches your query pops up to offer you a choice of answers!

It's pretty simple isn't it? But guess what - there are ways to be even more efficient, and more search-savvy! Being that the Internet is a very large computer database, seeking out information on it requires a few specific database rules.

Module Components

Module Overview:

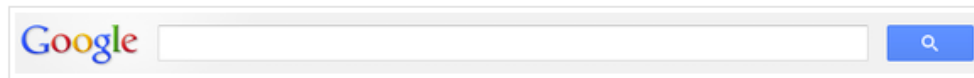
- I. Savvy Vocabulary
- II. Savvy Search Skills
 - A. Boolean Operator: AND, Find Function
 - B. Use of Quotations for Phrase Searching
 - C. Boolean Operator: OR
 - D. Boolean Operator: "-" Minus Sign
 - E. Truncation (*)

After each part of the journey, you will be asked to complete a quick "Savvy Search Skills in Action" activity.

GOAL • By the end of this module, you will be able to demonstrate an understanding

Part I: Savvy Vocabulary

"Search Bar/Box"



This is the Bar or Box that you type your search string/strand into.

"Key Words"



These are the important words you plug into your search string/strand.

"Search String" or "Search Strand"



Part II: Savvy Search Skills

Boolean Operator: OR with parenthesis

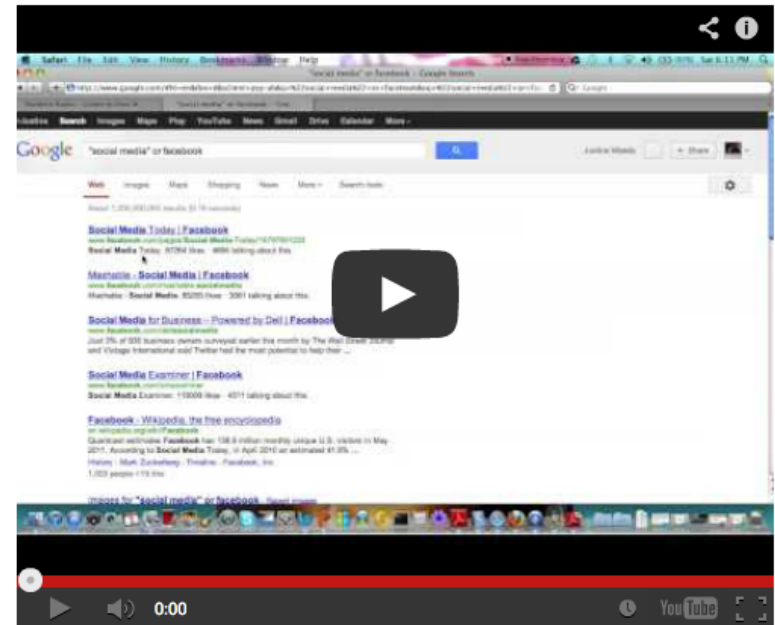
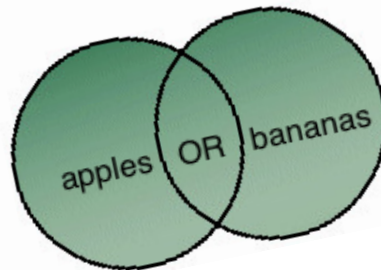
"OR"

Use the Boolean operator "OR" when you are looking for websites that have any of the terms you specify.

"OR" will broaden your search and make it easier for a webpage to meet in your search string.

Example:

A search for APPLES OR BANANAS will return any site that has to do with bananas. This is a broad search that will cover websites that have either term, as well as websites that include both terms.



Click on the gray button below to put your understanding of Quotations and Boolean Operator OR into quick action!

Savvy Search Skills in Action #2-3

Embedded Questions

* Required

Enter your 4 digit identification number. *

Open a new tab by holding down Control T (on PCs) or Command T (on Macs). On this new page, go to the Google Search Engine Page ([google.com](https://www.google.com)). Search for APPLES AND BANANAS. How many results did you get? *

Take a look at your search results for APPLES AND BANANAS. Which keywords will show up in every single result? *

- ☐ APPLES
- ☐ BANANAS
- ☐ APPLES, BANANAS
- ☐ None of the above.

What command can you use to find a keyword on a website? *

- ☐ Command F (on a Mac) or Control F (on a PC)
- ☐ Shift F7 (on a Mac) or Shift F3 (on a PC)

ARCS Model of Motivation

- Attention
- Relevance
- Confidence
- Satisfaction



Gaining Attention and Building Relevance to the Learner

Savvy Search Skills Journey

Home

Savvy Search Skills
Journey

Resources I: Vocabulary

Resources II: Search
Strategies

Google-a-Day



Aloha Research Participant!

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It's pretty simple isn't it? But guess what - there are ways to be even more efficient, and more search-savvy! Being that the Internet is a very large computer database, seeking out information on it requires a few specific database rules.

WELCOME to the web-based learning module entitled "The Savvy Search Skills Journey"! This research project is being conducted as a component of a project for a Master's degree in Educational Technology. The purpose of this project is to develop and evaluate a web based module teaching basic Google Internet searching skills for middle school students.



Examples and Non-examples

Truncation (*)



Use * when searching and when you want to truncate a search term. Truncating a key word basically means that you are telling the search engine that you only care about matches that meet the characters you have specified, and that anything after the "*" is not relevant.

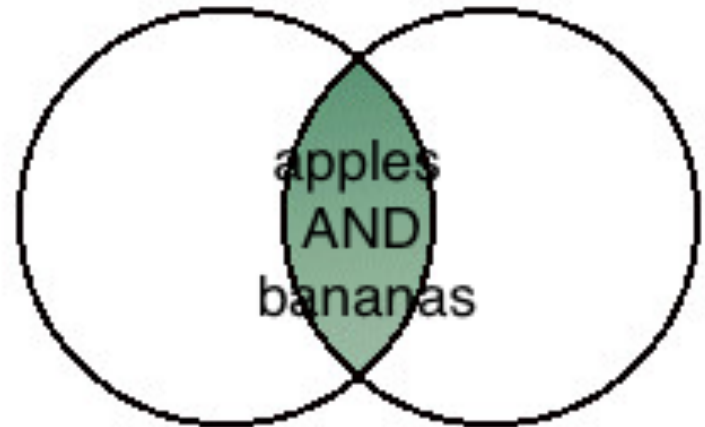
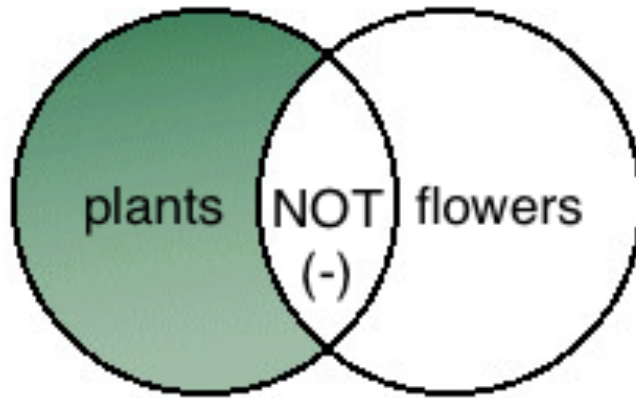
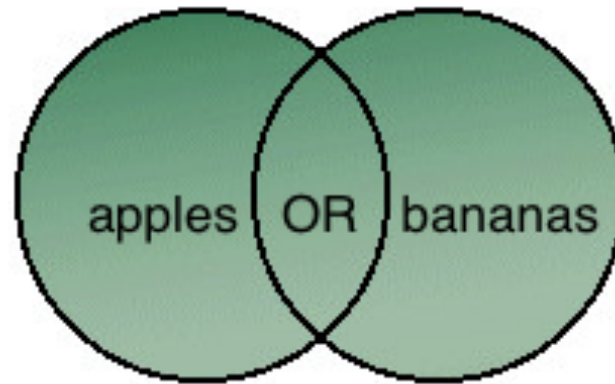
Example:

Searching for EDU* would return anything from sites about *educators*, *education*, and *educational*-related items. All search results would include the specific characters EDU within its content.

Non-Example:

If you were only looking for information about EDUCATORS, using the EDU* search would be inappropriate because search results would return any and all content that include EDU* in it.

Visual Examples



Encouraging Feedback and Answer Keys

ANSWER KEY:

Open a new tab by holding down Control T (on PCs) or Command T (on Macs). On this new page, go to the Google Search Engine Page (google.com). Search for APPLES AND BANANAS. How many results did you get?

About 2,540,000 results. (Answers may vary, depending on the day and time of search.)

What do you notice about the results of your APPLES AND BANANAS search?

All of my results contain both keywords "apples" AND "bananas."

What command can you use to find a keyword on a website?

Command F (on a Mac) or Control F (on a PC).

You sure are building those savvy skills up! Click on the green button below to learn about using Quotations for Phrase-searching and Boolean Operator OR.

Next>



Limited Navigation Options

Clearly stated Instructions and Objectives

Instructions:

1. Read the information below.
2. Watch the short clip.
3. Then take the quick quiz.

Objective:

You will gain an understanding of Boolean Operator "AND," along with the "FIND" tool, which will help you to conduct effective online searches.

Limited Navigation Options

ANSWER KEY:

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Limited Navigation Options

Resources Section

Savvy Search Skills Journey

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Google-a-Day

Contact Me



Google A Day

This is a not a required part of the module - but it's a fun part! This daily-changing search challenge will give you the opportunity to put your savvy searching skills

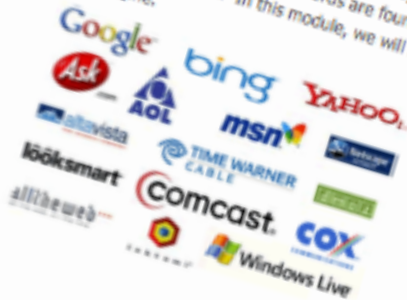
Resources Section

RESOURCES I: Vocabulary

In this "Resources I: Vocabulary" section, you will find all "OR" was covered in the module.

"Search Engine"

This is a program that searches websites for specified keywords and returns a list of the websites where the keywords are found. Below are some examples of search engines. In this module, we will focus on the Google search engine.



"Boolean Logic"

This allows you to combine words and phrases into search statements to retrieve documents from searchable databases. Boolean operators include: AND, OR, NOT

"Search Bar/Box"

Google

This is the Bar or Box that you type your search string/strand into.

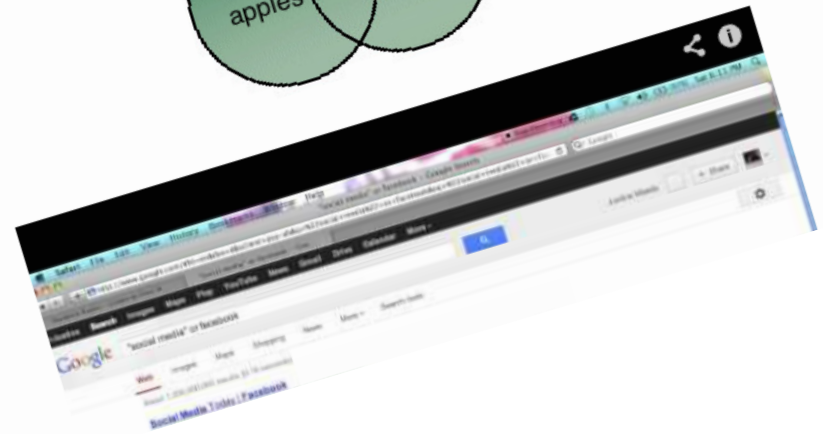
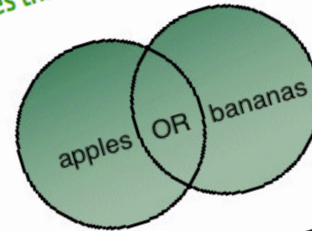
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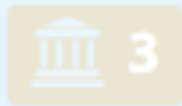
Example:

A search for APPLES OR BANANAS will return any site that has to do with both apples or bananas. This is a broad search that will cover websites that have either term, as well as websites that include both terms.



Put it into Practice!

Google-A-Day Game



Question:

In 2011, who was the president of the club that was established to safety in the game of American football?

0:16



[Hint?](#) [Clue?](#) [▶ Skip Question](#)

Evaluation Elements

- Pre-Survey
- Pre-Test
- Embedded Questions
- Post-Test
- Post-Survey



Pre Survey

* Required

Enter your 4-digit identification number. *

What is your gender? *

- ☐ Female
- ☐ Male

What is your age? *

- ☐ 18-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60-69
- ☐ 70-79
- ☐ 80-89

What field of work are you in? *

- ☐ Student
- ☐ Artistic/Musical
- ☐ Banking/Financial/Real Estate
- ☐ Clerical/Administrative
- ☐ Computer
- ☐ Construction/Craftsmanship
- ☐ Education/Academia
- ☐ Entertainment/Media
- ☐ Executive/Management
- ☐ Hospitality/Travel
- ☐ Law/Legal Services
- ☐ Medicine/Health

Do you use the Internet to search for answers to questions? *

- ☐ Yes
- ☐ No

How often do you use the Internet? *

- ☐ Daily
- ☐ Few times per week.
- ☐ Few times per month.
- ☐ Few times per year.
- ☐ Never.

Why do you use the Internet? *

- ☐ Personal reasons
- ☐ Entertainment
- ☐ School-related research
- ☐ Other:

Have you used Google, Bing, Yahoo, or other online search engines? *

- ☐ Yes
- ☐ No

Check off the following search engines you have HEARD OF: *

- ☐ Google
- ☐ Bing
- ☐ Yahoo!
- ☐ Ask
- ☐ AOL Search
- ☐ Other:

PRE TEST

* Required

Enter your 4-digit identification number. *

Key words are: *

- ☐ the words an online searcher would put together to form a complete sentence to plug into his/her search string/strand.
- ☐ certain words a searcher will select from a website, such as: the, are, and is.
- ☐ the important words an online searcher would plug into his/her search string/strand.
- ☐ the majority of the words included in the content of a website.

Boolean operators include: *

- ☐ PLUS (-), MINUS (-), EQUALS (=)
- ☐ NO, YES, MAYBE
- ☐ OR, AND, - (NOT)
- ☐ ADD (+), SUBTRACT (-), EQUALS (=)

A search engine is: *

- ☐ a web interface that allows one to share information and pictures with the online world.
- ☐ a device that an online searcher can use to make and receive calls over a link while moving around a wide geographic area by connecting to a various public networks.
- ☐ a program that searches websites for certain keywords and returns a list of the websites where the keywords are found.
- ☐ None of the above.

Results are: *

- ☐ receivers, such as the screen or speaker, used to monitor the content of an electronic

Jineane wants to find out as much as she can about stallions and unicorns, her two favorite animals. Her search string is STALLIONS AND UNICORNS. Will the keywords STALLIONS and UNICORNS show up in every single result? *

- ☐ Yes
- ☐ No

Evelyn is searching for information on "toy poodle and pulled muscle" in the Google search engine because her pet puppy, Charlie, hurt herself strenuously pawing for a treat that had gotten stuck in the rails of her crate. As Evelyn browses through a relevant website, what function can she use to help her type in her specific search word that would jump directly to information on "toy poodle" or "pulled muscle" on this website? *

- ☐ Command F7 (on a Mac) or Control F7 (on a PC)
- ☐ Control Alt Shift
- ☐ Control Alt Delete
- ☐ Command F (on a Mac) or Control F (on a PC)

Steve's friend is giving him a coop of chickens and hens. Steve types CHICKENS OR HENS into his search string. Will the keyword CHICKENS show up in every individual result? *

- ☐ Yes
- ☐ No

Which search will give Steve more results? *

- ☐ CHICKENS AND HENS
- ☐ CHICKENS OR HENS
- ☐ They will both give him about the same number of results.

Post-Test

Willy is looking for nutritional information on churros and malasadas. Which search string would give him a fewer number of results? *

- ☐ CHURROS AND MALASADAS
- ☐ CHURROS OR MALASADAS
- ☐ They would both have about the same number of results.

Connie's best friend told her that drinking milk and eating yogurt would improve her metabolism. Connie wants to find articles about both Vitamin D's and calcium's impact on one's metabolism. Which search string might be the most effective one for Connie to use? *

- ☐ "Vitamin D" and calcium and metabolism
- ☐ (Vitamin D and calcium) and "metabolism"
- ☐ "Vitamin D and calcium and metabolism"
- ☐ Vitamin D and calcium and metabolism

Mindy decided to become a vegetarian and is doing research on various nut butters to supplement her protein intake. She googles peanut butter, almond butter, and sunflower butter. Which search string would effectively maximize her number of results? *

Post-Survey

I feel that the module was well organized. *

- ☐ Strongly Agree
- ☐ Agree
- ☐ Unsure
- ☐ Disagree
- ☐ Strongly Disagree

I feel that the module was difficult. *

- ☐ Strongly Agree
- ☐ Agree
- ☐ Unsure
- ☐ Disagree
- ☐ Strongly Disagree

What do you feel was the best part of this instructional module? *

How can this module be improved? Please jot down your suggestions here. *

Results

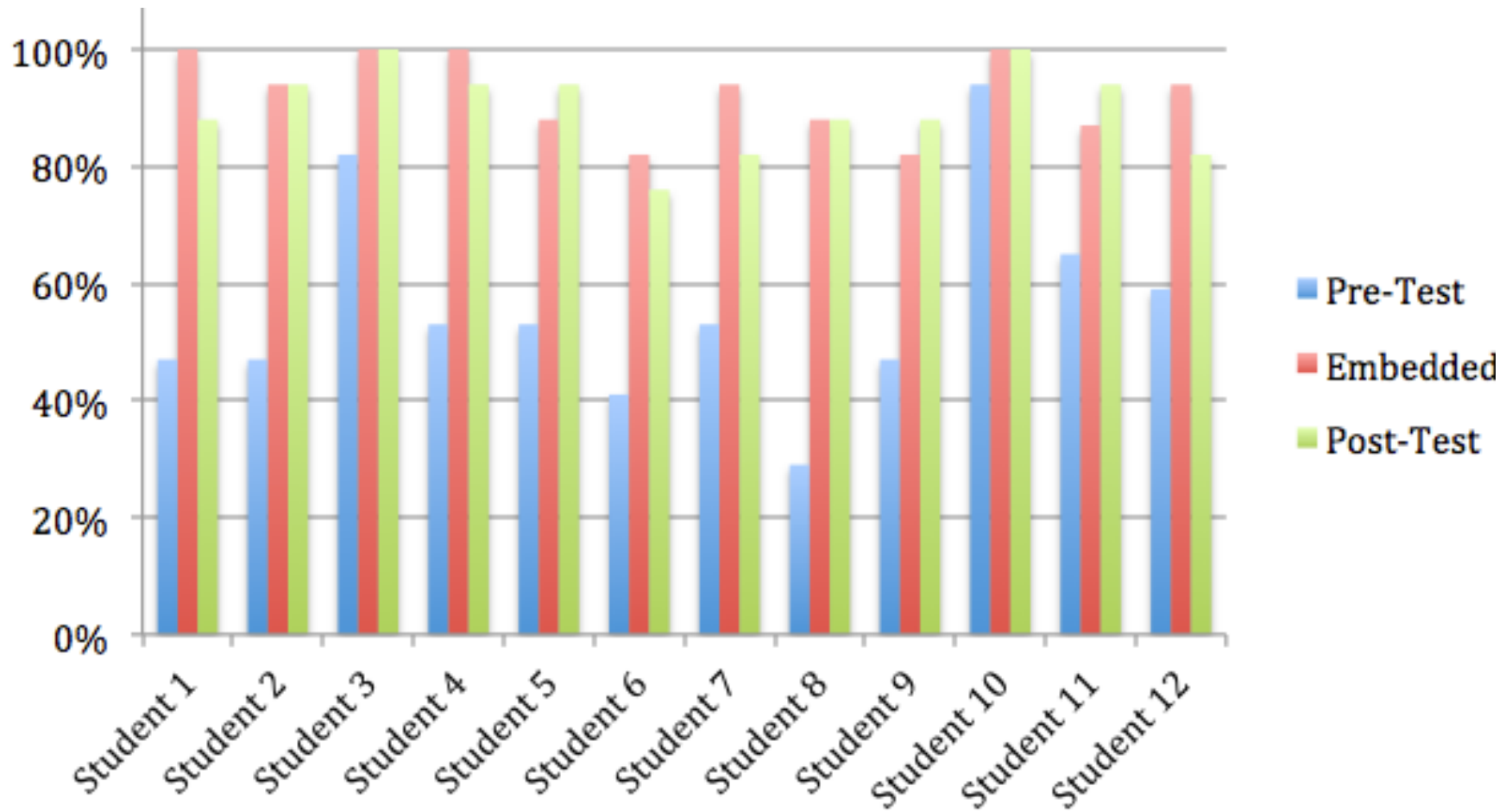


Results

- 12 respondents completed the module in its entirety.
- 4 males, 8 females
- Two participants already had high levels of experience with search skills
- A positive increase from pre-test to post-test for every question
- Average score for the pre-test = 56%
- Average score for the post-test = 90%



Pre-Test, Embedded, and Post-Test Scores



Average Percentage Correct Per Question (Pre-Test, Embedded Test, Post-Test)

Question #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Average Pre-Test (%)	92	42	83	75	83	83	100	33	75	75	17	33	33	92	25	33	12
Average Embedded Test (%)	100	100	100	100	100	92	100	100	100	92	100	75	83	92	67	92	75
Average Post-Test (%)	92	100	92	92	92	100	100	92	92	83	58	100	83	100	100	83	42

Attitudes Towards the Module



Positive Comments



Positive Comments

- “This was a great instructional module. I will definitely use the information I learned when I search the Internet.”
- “The first youtube video with Ms. J. Her personality was perfect for appealing to middle school students.”
- “Graphics and fonts were very nice.”
- “The drawings of Boolean concepts.”
- “Great job at explaining very technical concepts! Very logical. The videos helped a lot. I really liked the Venn diagrams.”

Negative Comments



Negative Comments

- “less lengthy”
- “need examples that are shorter and easier to read.”
- “I’m not sure ‘non-example’ is the best term. It was a bit confusing.”
- “truncation” and “Find Box” clarification

Conclusions



Obstacles

- DOE Student Participation
- Late Volunteer Participation
- Issues with Weebly and Google Forms



Successes

- Great content
- Interactive and engaging
- Participants had positive opinions towards online searching skills
- Increased confidence in search skills
- Effectiveness of Module = Score improvement in every participant



What I would do differently

- Emphasis on the review and revision process
- Integrate more instructional opportunities for complex application of search strategies
- Integration of more authentic practice opportunities
- Interdisciplinary opportunities

Questions?

Email me at jklmaeda@gmail.com

Savvy Search Skills Journey

can be found at Justinemaeda.weebly.com

Thank you very much!

